This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An imaging system ~~Imaging arrangement,~~ comprising

a) a nuclear spin tomography device ~~to obtain~~ capable of obtaining data for locally-resolved imaging of the magnetic resonance behavior of the atomic nuclei in a selected field of view in a body, the device being made and programmed such that the body can be exposed by the device to high frequency and magnetic field gradient echo pulse sequences that produce magnetization in a body such that the magnetization of a medium that is flowing in at least one direction in space in the body can be attenuated by dephasing the spins of the atomic nuclei in the medium, wherein the gradient echo pulse sequences are calculated such that an additional gradient contribution in each direction in spacial in which the medium is flowing in the body is added to a gradient echo pulse sequence needed for spacial coding in each direction of space without influencing the space coding, the gradient moment of the first order M_1 of the respective gradient echo pulse sequence being maximized by setting the gradient filed intensity and the slew rate to a respective maximum value, and

b) an MR contrast medium that is taken up by the body.

2. (Currently Amended) A system ~~Arrangement~~ according to claim 1, wherein ~~characterized in that~~ the magnetization of the medium flowing in at least one direction in space in the body can be attenuated by dephasing of the spins by maximizing gradient moments of order i $M_i(t)$ ~~being maximized~~ in ~~this~~ such direction in space according to the following relation:

$$M_i(t)=\gamma \bullet \int_0^t G(t').t'^i dt'$$

wherein ~~whereby~~

i is an integer greater than zero,

γ is the gyromagnetic ratio of the atomic nuclei,

G(t') is a time-dependent gradient field intensity in ~~this~~ such direction in space and

t is the time interval that has passed since the emission of a high frequency pulse for excitation of the atomic nuclei.

3. (Currently Amended) A system ~~Arrangement~~ according to claim 2, wherein the magnetization of the medium flowing in at least one direction in space in the body can be attenuated by dephasing of the spins ~~in that~~ by maximizing gradient moments of the first order $M_1(t)$ ~~are maximized~~ in ~~this~~ such direction in space according to the following relation:

$$M_1(t) = \gamma \bullet \int_0^t G(t') \bullet t' dt' \ .$$

4. (Currently Amended) A system ~~Arrangement~~ according to claim 1 ~~claims~~, wherein gradient echo pulse sequences can be produced in the respective directions in space by inserting the flow dephasing gradient pulses into flow-compensated imaging gradient echo pulse sequences.

5. (Currently Amended) A system ~~Arrangement~~ according to claim 4, wherein M_1 satisfies the following relation:

$$M_1(t; Gbipolar, tramp, tplateau, tsep) = \gamma \bullet Gbipolar \,\&\, (tramp + tplateau) \bullet (2tramp + tplateau + tsep) \quad \text{~~[7]~~}$$

wherein

γ is the gyromagnetic ratio of the atomic nuclei,

Gbipolar is the maximum gradient field intensity,

Tramp is rise/fall time when the gradient field is turned on/off,

tplateau is the time interval during which *Gbipolar* is reached, and

tsep is the time interval between two gradient pulses.

6. (Currently Amended) A system ~~Arrangement~~ according to claim 1, wherein the device comprises

- a static magnet,
- gradient devices for producing gradient pulses in three directions in space that are orthogonal to one another,
- a transmission device for producing high frequency signals,
- a receiving device for high frequency signals,
- a device for triggering gradient devices and the transmission device,
- an evaluation device, and
- a display device ~~[sic]~~.

7. (Currently Amended) A system ~~Arrangement~~ according to claim 1, wherein the MR contrast medium can be administered intravenously to a human or animal body.

8. (Currently Amended) A system ~~Arrangement~~ according to claim 1, wherein the MR contrast medium is lymph-passable and/or plaque-passable.

9. (Currently Amended) A process ~~Process~~ for locally-resolved imaging of the magnetic resonance behavior of atomic nuclei in a selected field of view in a body in which data from the field of view are obtained by means of a nuclear spin tomography device by the body being exposed to high frequency and magnetic field gradient echo pulse sequences that produce magnetization in the body such that the magnetization of a medium flowing in at least one direction in space is attenuated in the body by dephasing of the spins of the atomic nuclei in the medium and by an MR contrast medium being supplied to the body, wherein the gradient echo pulse sequences are calculated such that an additional gradient contribution in each direction in spacial in which the medium is flowing in the body is added to a gradient echo pulse sequence needed for spacial coding in each direction of space without influencing the space coding, the gradient moment of the first order M_1 of the respective gradient echo pulse sequence being maximized by setting the gradient filed intensity and the slew rate to a respective maximum value.

10. (Currently Amended) A process ~~Process~~ according to claim 9, wherein the magnetization of the medium flowing in at least one direction in space in the body is attenuated by dephasing of the spins by ~~the~~ maximizing gradient moments of order i $M_i(t)$ ~~being maximized~~ in ~~this~~ such direction in space according to the following relation:

$$M_i(t) = \gamma \cdot \int_0^t G(t') \cdot t'^i \, dt'$$

wherein ~~whereby~~

i is an integer greater than zero,

γ is the gyromagnetic ratio of the atomic nuclei,

G(t') is a time-dependent gradient field intensity in ~~this~~ such direction in space and

t is the time interval that has passed since the emission of a high frequency pulse for excitation of the atomic nuclei.

11. (Currently Amended) A process ~~Process~~ according to claim 10, wherein the magnetization of the medium flowing in at least one direction in space in the body is attenuated by dephasing of the spins by ~~the~~ maximizing gradient moments of the first order $M_1(t)$ ~~being maximized~~ in ~~this~~ such direction in space according to the following relation:

$$M_1(t)=\gamma \cdot \int_0^t G(t').t'dt' \; .$$

12. (Currently Amended) A process ~~Process~~ according to claim 9, wherein gradient echo pulse sequences are produced in the respective directions in space by inserting the flow dephasing gradient pulses into flow-compensated imaging gradient echo pulse sequences.

13. (Currently Amended) A process ~~Process~~ according to claim 12, wherein M_1 satisfies the following relation:

$M_1(t; Gbipolar, tramp, tplateau, tsep) = {}_{\gamma}. Gbipolar . (tramp + tplateau) . (2tramp + tplateau + tsep)$ ~~[7]~~

wherein

γ	is the gyromagnetic ratio of the atomic nuclei,
Gbipolar	is the maximum gradient field intensity,
Tramp	is rise/fall time when the gradient field is turned on/off,
tplateau	is the time interval during which *Gbipolar* is reached, and
tsep	is the time interval between two gradient pulses.

14. (Currently Amended) A process ~~Process~~ according to claim 9, wherein the MR contrast medium is administered intravenously to a human or animal body.

15. (Currently Amended) A process ~~Process~~ according to claim 9, wherein the MR contrast medium is ~~lymphpassable~~ lymph-passable and/or plaque-passable.